

# Exhibit K

Message

---

**From:** Nitish Korula [nitish@google.com]  
**Sent:** 1/3/2019 3:50:19 PM  
**To:** Rahul Srinivasan [rahulsr@google.com]  
**Subject:** Fwd: first price bidding impact

----- Forwarded message -----

**From:** **Jim Giles** <jimgiles@google.com>  
**Date:** Thu, Sep 6, 2018 at 7:52 PM  
**Subject:** Re: first price bidding impact  
**To:** Nitish Korula <nitish@google.com>  
**Cc:** Max Lin <whlin@google.com>

Awesome - thank you very much guys.

On Thu, Sep 6, 2018 at 6:49 PM Nitish Korula <nitish@google.com> wrote:  
Hi Jim,

Max and I spent an hour modeling this today, and here are our best estimates.

The main thing to remember is that the primary benefit here is from lowered unified floors that a first-price auction enables, not 'first price' in itself.

---Modeling info---

The modeling is based on an experiment where we remove publisher-configured ('rule') floors, but keep all other reserve prices. Actual numbers will likely be slightly lower because publishers may not lower their floors all the way to 0, but this is hard to evaluate. We can continue to incentivize them to lower floors, but the benefit may only be half as large, or a third.

Note that we did not model any AdSense / AdMob move to first-price, but this is less significant since they don't have meaningful rule floors.

Things that we accounted for:

1. Budget-constrainedness of GDN / GMob / DBM
2. Lower bidding due to first price: We assume that the ratio of payments to 'true' advertiser values will be ~0.6, which is in line with what it is for DBM on AdX today, and lower than DBM on other 3PE. (But the next Poirot launch is expected to bring that ratio for 3PE also to ~0.6. GDN's Marple system will likely be similar to Poirot.)
3. Lower RPI than today, since the impressions that we win will likely be below current floors. (Though sometimes we lose due to higher floors. We looked at the shift in RPI for DBM from the experiment to estimate this.)
4. Budget shifts from other sellside platforms (AdMob, AdSense, 3PE)
5. Fewer repeated calls. (We can evaluate 4 + 5 fairly well from the experiment.)

What we did not account for well is:

1. How intelligently GDN and DBM will bid. Presumably there will be some efficiency loss, but this is hard to quantify, and presumably will reduce over time as GDN and DBM keep optimizing their bidding logic in a first-price world.
2. AdX buyer response. We assumed negative effects due to less efficiency, but no benefit from dumb buyers continuing to bid high. (Such a benefit will likely be relatively short-lived, even if we don't build surplus maximization for them.) That is, the assumption is that there's a net loss from AdX buyers, as they don't compete as well.

We estimated relative changes on each seller\_network x buyer slice, then rebased off actual revenue for the month of August 2018, multiplied by 12. August is generally a good month; in 2017, August was 1/12.271 of annual revenue. August also has the advantage that it's after some of the negative revenue shocks related to GDPR and DT deprecation.

Note that we're quoting dollar amounts below, which doesn't take into account growth effects over time / by the time we actually launch.

---Results---

**Best guess:** +\$430M Google gross revenue annually, +\$118M Google net revenue.

Note that this doesn't take into account bidding efficiency losses (hopefully short-term), or publishers setting intermediate floors (lower than today, but not 0). You could multiply these numbers by anywhere from half to 2/3 for that.

This is also mildly conservative in some ways (in a couple of places, we took the lower bound of a confidence interval).

**Alternate version:** To be conservative in a different way, we applied the GDN and DBM budget-constrained factors differently on segments where we see a gain and a loss. If we assume that budget-constrainedness affects us in the segments where we win (decreasing our gains), but not in the segments we lose (i.e. it doesn't mitigate our losses), then the numbers are:

+\$275M Google gross revenue annually, +\$65M Google net revenue. (Again, this is without assuming publisher floors continue to exist, but the budget-constrainedness here is somewhat ridiculous.)

Let us know if you have any questions. Modeling is in a spreadsheet [here](#), but we didn't have time to clean it up so anyone else can actually understand it, sorry.

Thanks,  
Nitish

On Thu, Sep 6, 2018 at 7:56 AM, Jim Giles <[jimgiles@google.com](mailto:jimgiles@google.com)> wrote:

Hi guys,

Finance would like to know the expected impact (gross/net) of moving to first price bidding and common floors for next year and in subsequent years. Specifically, what we think the realized will be in 2019 and 2020.

What is your best estimate right now? I believe this is the experiment right?